

#### **ABSTRACT**

Sound processing systems have been developed that create a surround effect without quality degradation experienced by known sound processing systems in non-optimum listening environments. The sound processing systems may include matrix decoding systems  
5 that manipulate input signals prior to converting them into a number of output signals so that the output signals are a function of a greater number of input signals. These sound processing systems may also or alternately include a base management system that from the input signals preserves the low frequency components of the input signals in separate channels. Both the matrix decoding systems and base management systems may also  
10 produce additional signals. Further, the matrix decoding and base management systems may be implemented separately or jointly in vehicular sound systems.